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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,891	CANDELORE ET AL.	
	Examiner	Art Unit	
	ALFONSO CASTRO	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/27/2008; 2/2/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/9/2009 has been entered.

Response to Arguments

2. Applicant's arguments filed 3/9/2009 have been fully considered but they are not persuasive. In response to applicant's argument regarding replacement of original content by substitute content and the substitution of macroblocks of original content by macroblocks of substitution content (Applicant's Remarks 3/9/2009 page 8), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). As noted above, Flickinger discloses inserting, replacing, substituting, or splicing content into the programming being delivered or the programming being viewed using MPEG signals. The combined teachings of the references would have suggested to those of ordinary skill in the art that inserting content into an MPEG stream (or splice)

requires creating new macroblocks that would precisely replace existing ones. Therefore, in response to applicant's arguments against the Flickinger and Hoarty references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant's first argument regarding the Flickinger reference does not disclose or teach which PID is the "original content" (Applicant's Remarks 3/9/2009 page 8). A review of Flickinger identifies a system which can be used in a digital television service delivery network with video or mutimedia stream such as MPEG signals. Flickinger teaches the insertion of content directly into a portion of the screen during actual programming or replacing existing data in the data stream. Flickinger further discloses substituting or splicing content into the programming being delivered or the programming being viewed. Hence, Flickinger teaches use of MPEG signals for insertion, replacing, substituting or splicing content into programming being delivered or viewed implicitly teaches at least two pieces of content, a first content, being delivered or view, and a second content for inserting, replacing, substituting, or splicing which suggests the programming being delivered or viewed is the original content. While the Flickinger does not specifically reference "original content", one of skill in the art would recognize the implicit teachings of Flickinger.

Applicant's next argument regarding intepreting packet identifier (PID) as defined on page 6, in lines 1-14 of the as filed specification. Applicant's disclosure page 6 lines 12-

14 discloses a PID is utilized to distinguish between two or more digital television signals and page 6 lines 14-15 discloses "[n]ormally a single set of packet identifiers is used to identify a particular television program". Hence, interpreting PID in light of applicant's specification, PID identifies a particular television program while Flickinger teaches in the case of digitally encoded video (e.g, MEPG-2) a separate data stream could be created for each program stream, each having a program identification (PID)) which carries the tag used to identify the content. Therefore, a packet identifider (PID) used to identify a particular television program reads on Flickinger.

In response to applicant's argument regarding replacement of original content by substitute content and the substitution of macroblocks of original content by macroblocks of substitution content (Applicant's Remarks 12/29/2008 page 9), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). As noted above, Flickinger discloses inserting, replacing, substituting, or splicing content into the programming being delivered or the programming being viewed using MPEG signals. The combined teachings of the references would have suggested to those of ordinary skill in the art that inserting content into an MPEG stream (or splice) requires creating new macroblocks that would precisely replace existing ones. Therefore, in response to applicant's arguments against the Flickinger and Hoarty

references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Information Disclosure Statement

3. The information disclosure statements (IDS) submitted on 10/27/2008 and 2/02/2009 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Status of Claims

4. Claims 1, 15, and 28 have been amended. Claims 1-29 are pending.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flickinger et al. PG Pub 2005/0210502 (hereinafter "Flickinger"), Fairhurst's MPEG-2 Transmission January 2001 (hereafter Fairhurst or MPEG-2 Transmission), in view of Hoarty US Patent 5,594,507 (hereinafter "Hoarty").

8. Regarding claim 1, "a method of content substitution" reads on Flickinger (page 3, [0041] line 1-22 – invention used to insert ads into television programming or replace existing data in data streams where [0049] line 1-7 teaches ads are content);

"receiving data representing video content" reads on Flickinger (0028 lines 1-10; 0030 lines 11-14; and 0031 lines 1-5; and 0045 – transmitting video content);

Regarding "the data having a plurality of packet identifiers (PIDs) where each PID is associated with one or more macroblocks of original content", Flickinger teaches ([0077] line 3-13 – a separate PID is created for each data stream and for each ad program stream. While Flickinger does not specifically reference "each PID is associated with one or more macroblocks", the prior art discloses the transmitted data having PID associated with macroblock of content (page 2 "MPEG-2 Transmission"--disclosing MPEG data stream comprising video access units and an access unit will be a complete encoded video frame where access units correspond to more than one

macroblock associated with a respective packet identifiers). While Flickinger does not specifically reference which PID is the “original” content, in an analogous art, Hoarty teaches data is “associated with one or more macroblocks of original content” where a compressed digital overlay controller and method for MPEG type video signal that functions to substitute one macroblock for a corresponding macroblock for multiple video signals or data streams (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed). Hoarty further teaches that in accordance with MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to "associated with one or more macroblocks of original content” (Col. 2, lines 34-40). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify a method for receiving a separate PID for each data streams by associating PIDs with corresponding macroblocks as taught by the prior art of MPEG2 Transmission and by further incorporating a method for each content stream is associated with creating separate PID for each data stream or program stream by further associating the macroblocks with each content to be presented as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

“initiating processing of content having the first PID” reads on Flickinger ([0048] line 3-5, ads are transmitted to the STBs for storage until they are played corresponds to processing the first PID);

"determining that a substitution criterion has been met to substitute one or more macroblocks of original content” Flickinger teaches (“substitution criterion” corresponds to Flickinger [0042] line 1-11 replacing existing data if desired into the data stream by television service provider). While Flickinger discloses this limitation but does not specifically reference the phrase “substitute one or more macroblocks of original content”, Flickinger implicitly teaches ““substitute one or more macroblocks of original content” where a person skilled in the art would have understood Flickinger’s teaching (page 3 [0041]) as inserting ads or substituting only a portion of the PID macroblocks when viewed in light of the prior art of “MPEG-2 Transmission” discussed above. Substituting one or more macroblocks of original content is disclosed by Hoarty (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify a method for receiving data streams comprising PIDs by associating PIDs with corresponding macroblocks as taught by the prior art of MPEG2 Transmission by further associating the different content with corresponding macroblocks to be presented as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

Regarding “substituting the one ore more macroblocks having a second PID for the one or more macroblocks having a first PID”, Flickinger teaches the system inserts ads directly into a portion of the screen during the actual programming (the actual programming corresponds to applicant's macroblock having the first PID”). While Flickinger does not specifically reference the phrase “substituting the one ore more macroblocks...for one or more macroblocks...", a person skilled in the art would have understood the display area is broken up into macroblocks to accomplish insertion when viewed in light of prior art discussed above “MPEG-2 Transmission” (Flickinger page 3, [0041] line 6-15). In an analogous art, Hoarty teaches “substituting the one ore more macroblocks...for one or more macroblocks..." where a compressed digital overlay controller and method for MPEG type video signal that functions to substitute one macroblock for a corresponding macroblock for multiple video signals or video data streams (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed; Col. 2, lines 34-40-- in MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to "first and second macroblock of original content”). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify substituting a macroblock of the content with the first packet identifier with a corresponding macroblock of the content with the second packet identifier by associating the original, or first data stream or program stream, with a first

and second macroblock of content for each data stream or program stream as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

"processing the substituted content" reads on Flickinger (0093 line 13-15 -- resulting program stream with the substituted content is sent to the display device).

9. As to Claim 2, Flickinger et al. teaches "carried out in a decoder forming a part of a television Set-top box" ([0035], line 12-16 -- integrated component of Set-top box decodes and encodes data and also inserts ads into the data stream). Also see Figures 5,6,9 and [0011, 0013, 0077, 0098].

10. As to Claim 3, Flickinger et al. teaches content substitution as discussed in claim 1 is "carried out in a hardware state machine" (Page 3, [0034], line 9-16 – finite state machine understood to correspond to a hardware state machine).

11. As to Claim 4, Flickinger et al. teaches a method of content substitution is "carried out in a programmed processor" ([0034], line 9-16 —teaching integrated components of Set-top box for inserting ads into data stream comprise processors [0034], line 9-16, [0035], line 12-16; [99] Col. 2, line 11-16 specification teaches circuit to be programmed general purpose processors).

12. Regarding claim 5, "the substitution criterion is met as a result of receipt of a flag", Flickinger solves the problem of the need to use a "flag" as disclosed by applicant for automatically detecting a location where a substitution of content is to start and end (Flickinger--0041, line 17-19—teaching avails) and additionally teaches: 1) scheduler 912 that receives instructions on when ad should be played or substituted ([0094], line 1-10) and 2). "management of ads which are inserted into a portion of the screen during the actual programming" (page 2, [0041]) which therefore teaches that the actual programming corresponds to applicant's "main content" and the ads inserted into the actual programming is the "substitution content data" because the ads inserted into the display replace/or substitute the actual programming. Flickinger does not specifically refer to which PID is the "original" content in amended claim 1. In an analogous art, Hoarty teaches data is "a first macroblock of original content and second macroblock of substitution content" where method for MPEG type video signal that functions to substitute one macroblock for a corresponding macroblock for multiple video signals or video data streams (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed). Hoarty further teaches that in accordance with MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to "first and second macroblock of original content" (Col. 2, lines 34-40). Therefore, it would have been obvious to one or ordinary skill in the art to use a method for automatically

indicating when and where an ad is to be inserted or replaced by using an indicator for identifying the location of where ads or data is to be inserted/overlayed and replacing the original data stream with the substitute content as taught by Hoarty in order to provide efficiency in an automated substitution.

13. As to Claim 6, Flickinger et al. teaches "the substitution criterion is met as a result of an operator input" (0097, lines 1-9 updating or switching among multiple ads is determined by viewer selections input by user via remote control operation).

14. As to Claim 7, Flickinger et al. teaches "processing comprises playing the content" (0048 lines 3-5 content corresponds to ads are stored until they are played; 0093 line 13-15 – playing the content is part of processing steps where the resulting program stream with substituted ad is sent to television or other display device).

15. As to Claim 8, Flickinger et al. teaches "the substituting comprises using private signaling to select the macroblock of content with the second PID and discarding the macroblock of content with the first PID (0077 lines 1-12 content having PID; (0093, line 7-13 – the ad to be inserted is queued by a digital que tone transmitted in the MPTS and used to substitute the original ad). Also see 0074 and 0091 lines 1-7.

16. As to Claim 9, "wherein the substituting comprises using private signaling to select the macroblock of content on the second PID while receiving the macroblock with the first PID" reads on Flickinger (claim 8 discusses use of private signaling to select the

macroblock of content and Flickinger further teaches main program being viewed while the designated replacement ads are received [0045] lines 3-6—and where each data content has a PID [0077] lines 1-12).

17. As to Claim 10, Flickinger et al. teaches "substituting is initiated and terminated by private signaling forming part of an adaptation layer of packets in a data stream" ([0093] line 1-15 --data stream carries digital cue tone used for identifying where the substituted ad is to be placed in the data stream corresponds to the private signaling used to indicate when the substitution is to be initiated and terminated. Flickinger et al. contains an enabled disclosure for signaling carried as part of the transport stream in an adaptation layer as shown in [0077] lines 1-18 and [0093] lines 1-16 and can be carried in an adaptation field in a transport stream packet as shown in "MPEG-2 Transmission" page 8 and 9 regarding transport packet adaptation layer. Flickinger et al. teaches this limitation for private signaling carried as part of an adaptation layer in a transport stream packet in a data stream. This is a multiple reference rejection under MPEP 2131.01).

18. As to Claim 11, Flickinger et al. teaches "adaptation layer is in a packet with the second PID" ([0093], line 1-15 – programming stream in form of DVB transport stream or multiple program transport stream and is understood to contain signaling tables and adaptation fields which may be contained in either one of the transport streams of the MPTS).

19. As to Claim 12, Flickinger et al. teaches “adaptation layer is in a packet with the first PID” ([0093], line 1-15 – programming stream in form of DVB transport stream or multiple program transport stream and is understood to contain signaling tables and adaptation fields which may be contained in either one of the transport streams of the MPTS).

20. As to Claim 13, Flickinger et al. teaches “adaptation layer is in a packet that is neither the second nor the first PID” ([0093], line 1-15 – multiple program transport stream which may contain multiple PIDs and understood that an adaptation layer may be may be indicated in any of the PIDs where multiple is understood to mean more than two).

21. As to Claim 14, Flickinger et al. teaches “a computer readable medium storing instructions which, when executed on a programmed processor, carry out the content substitution method according to Claim 1" ([0099], Col. 2, line 4-18, processing steps correspond to software or hardware encompassing processors, computers, CPUs and programmed general purpose processors to include memory).

22. Claims 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flickinger et al. PG Pub 2005/0210502 (hereinafter "Flickinger"), Fairhurst's MPEG-2 Transmission January 2001 (hereafter Fairhurst or MPEG-2 Transmission), Hoarty US Patent 5,594,507 (hereinafter "Hoarty"), in view of Bryant et al., US 5,652,615 (hereafter Bryant).

23. Regarding claim 15, "a method of content substitution" reads on Flickinger (page 3, [0041] line 1-22 – invention used to insert ads into television programming or replace existing data in data streams where [0049] line 1-7 teaches ads are content);

"receiving data representing content" reads on Flickinger (page 4, [0049], line 7-10 – content corresponds to ads and metadata about the ads are delivered in programming stream where [0049] line 1-7 teaches storing ads are content);

Regarding "the data having a plurality of packet identifiers (PIDs) associated with one or more macroblocks of original content and one or more macroblocks of substitution content", Flickinger teaches ([0077] line 3-13 – a separate PID is created for each data stream and for each ad program stream. While Flickinger does not specifically reference the packet identifiers are "associated with one or more macroblocks of original content and one or more macroblocks of substitution content" the prior art discloses the transmitted data having PID associated with macroblock of content (page 2 "MPEG-2 Transmission"--disclosing MPEG data stream comprising video access units and an access unit will be a complete encoded video frame where access units correspond to more than one macroblock associated with a respective packet identifiers). Flickinger does not specifically reference the "original content" and

the “substitution content”, in an analogous art, Hoarty teaches data is with original content and content to be substituted where a compressed digital overlay controller and method for MPEG type video signal that functions to substitute one macroblock for a corresponding macroblock for multiple video signals or data streams (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed; Col. 2, lines 34-40-- in MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to macroblocks of original or substitute content. Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify a method for receiving a separate PID for each data streams by associating PIDs with corresponding macroblocks as taught by the prior art of MPEG2 Transmission and by further associating the macroblocks with each content to be presented as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

“placing content having a primary PID into a data stream” (Flickinger [0042], line 1-11, main programming is part of normal stream of information);

Regarding “receiving an initiation flag indicating initiation of a PID mapping operation; mapping content having a secondary PID to a primary PID and placing the mapped content into the data stream; receiving a termination flag indicating termination of the PID mapping operation; and continuing to place content having a primary PID into

the data stream", the term “PID mapping” is described by applicant’s specification (page 14, lines 7-10[0031], line 13-17) and is interpreted by examiner as indicating the main content from substitutable content. Flickinger teaches ([0041] lines 1-6—ads are inserted into programming or inserting any data into any other data stream; [0041] line 17-19--automatically detecting a location where a substitution of content is to start and end; [0094], line 1-10--scheduler 912 that receives instructions on when ad should be played or substituted; initiation flag as claimed by applicant corresponds to designating an indicator for automatically detecting the location of where a substitution of content is to start and end). While Flickinger does not specifically reference the term “PID mapping” for substituting one data stream for another, in an analogous art, Bryant teaches the missing limitation of Flickinger (col. 5 lines 65-67 to col. 6 lines 1-54 & col. 7 lines 19-67 to col. 8 lines 1-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant’s invention to modify the teachings of Flickinger to designate a means for indicating the beginning and end of the substitution of content by using an indicator or “flag” for identifying the location of where substituted data is to be inserted/overlayed in the programming or original data stream by incorporating a method of mapping PIDs as taught by Bryant because the combination of references results in a process that is more desirable and more efficient.

24. As to Claim 16, Flickinger et al. teaches a method of content substitution “carried out in a decoder forming part of a television Set-top box” ([0035], line 12-16 -- integrated component of Set-top box decodes and encodes data and also inserts ads into the data stream).

25. As to Claim 17, Flickinger et al. teaches a method of content substitution comprising the method being “carried out in a hardware state machine” ([0034], line 9-16 -- finite state machine understood to correspond to a hardware state machine).

26. As to Claim 18, Flickinger et al. teaches a method of content substitution comprising method “carried out in a programmed processor” ([0034], line 9-16 — teaching integrated components of Set-top box for inserting ads into data stream comprise processors [0034], line 9-16, [0035], line 12-16; [99] Col. 2, line 11-16 specification teaches circuit to be programmed general purpose processors).

27. Regarding claim 19, "the substitution criterion is met as a result of receipt of a flag”, Flickinger solves the problem of the need to use a “flag” as disclosed by applicant for automatically detecting a location where a substitution of content is to start and end (Flickinger--0041, line 17-19—teaching avails) and additionally teaches: 1) scheduler 912 that receives instructions on when ad should be played or substituted ([0094], line 1-10) and 2). “management of ads which are inserted into a portion of the screen during the actual programming" (page 2, [0041]) which therefore teaches that the actual programming corresponds to applicant's “main content” and the ads inserted into the actual programming is the “substitution content data" because the ads inserted into the display replace/or substitute the actual programming. Flickinger does not specifically refer to which PID is the “original” content in amended claim 1. In an analogous art, Hoarty teaches data is “a first macroblock of original content and second macroblock of

substitution content" where method for MPEG type video signal that functions to substitute one macroblock for a corresponding macroblock for multiple video signals or video data streams (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed). Hoarty further teaches that in accordance with MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to "first and second macroblock of original content" (Col. 2, lines 34-40). Therefore, it would have been obvious to one or ordinary skill in the art to use a method for automatically indicating when and where an ad is to be inserted or replaced by using an indicator for identifying the location of where ads or data is to be inserted/overlayed and replacing the original data stream with the substitute content as taught by Hoarty in order to provide efficiency in an automated substitution.

28. As to Claim 20, Flickinger et al. teaches "substitution criterion is met as a result of an operator input" (0097, lines 1-9 updating or switching among multiple ads is determined by viewer selections).

29. As to Claim 21, Flickinger et al. teaches "substituting comprises using private signaling to select the macroblock of content with the secondary PID and discarding the macroblock of content with the primary PID" (0093, line 7-13 – the ad to be inserted is queued by a digital que tone and the original ad is substituted).

30. As to Claim 22, Flickinger et al. teaches "substitution is initiated and terminated by private signaling forming part of an adaptation layer of packets in a data stream" ([0093] line 1-15 --data stream carries digital cue tone used for identifying where the substituted ad is to be placed in the data stream).

31. As to Claim 23, Flickinger et al. teaches "wherein the adaptation layer is in a packet with the one of the primary PID and the secondary PID" ([0093], line 1-15 – programming stream in form of DVB transport stream or multiple program transport stream and is understood to contain adaptation fields which may be contained in either one of the transport streams of the MPTS. Flickinger et al. contains an enabled disclosure for signaling carried as part of the transport stream in an adaptation layer as shown in [0077] lines 1-18 and [0093] lines 1-16 and can be carried in an adaptation field in a transport stream packet as shown in "MPEG-2 Transmission" page 8 and 9 regarding transport packet adaptation layer. Flickinger et al. teaches this limitation for an adaptation layer contained in a transport stream packet in a data stream. This is a multiple reference rejection under MPEP 2131.01).

32. As to Claim 24, Flickinger et al. teaches "wherein the adaptation layer is in a packet that has neither the secondary nor the primary PID" ([0093], line 1-15 – multiple program transport stream which may contain multiple PIDs and understood that an adaptation layer may be may be indicated in any of the PIDs where multiple is understood to mean more than two. Flickinger et al. contains an enabled disclosure for

signaling carried as part of the transport stream in an adaptation layer as shown in [0077] lines 1-18 and [0093] lines 1-16 and can be carried in an adaptation field in a transport stream packet as shown in "MPEG-2 Transmission" page 8 and 9 regarding transport packet adaptation layer. Flickinger et al. teaches this limitation for an adaptation layer contained in a transport stream packet in a data stream. This is a multiple reference rejection under MPEP 2131.01).

33. As to Claim 25, Flickinger et al. teaches "a computer readable medium storing instructions which, when executed on a programmed processor, carry out the content substitution method" ([0099], Col. 2, line 4-18, processing steps correspond to software or hardware encompassing processors, computers, CPUs and programmed general purpose processors to include memory).

34. As to claim 26, "a content substitution encoder" reads on Flickinger ([0052], line 1-10 – ads, ad metadata, and programming content are encoded);

"means for receiving input data representing at least one macroblock of main content" (([0052], line 1-10; Figure 9, 901 identifies MPTS transport stream with programming);

"means for receiving input data representing at least one macroblock of substitution content" Flickinger teaches ([0052], line 1-10; Figure 9, 901 identifies MPTS transport stream with ads and ads metadata which allows one of ordinary skill in the art to draw an inference that MPTS transport streams transmit data comprising

macroblocks). While Flickinger does not specifically reference the phrase “data representing at least one macroblocks of substitution content", Flickinger teaches a separate PID is created for each data stream and for each ad program stream, ([0077] line 3-13). A person skilled in the art would have understood PIDs comprise macroblocks (page 2 “MPEG-2 Transmission”-- PID associated with macroblock of content). In an analogous art, Hoarty teaches “data representing at least one macroblock of substitution content” (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed; Col. 2, lines 34-40). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify receiving a plurality of data streams comprising PIDs by receiving data for macroblocks associated with the PIDs as taught by the prior art (MPEG-2 Transmission) and by further receiving a macroblock of the content to be substituted as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

“means for initiating a packet identifier (PID) mapper that assigns a primary PID to the main content and assigns a secondary PID to the substitution content” Flickinger teaches ([0093], line 1-15 – DVB transport stream i.e. MPTS understood to identify packets with PIDs when transported where one or ordinary skill in the art would draw and inference that each macroblock of content is assigned a PID). Flickinger does not specifically reference which content is the main or secondary content but teaches

multiple content is received. Hoarty further teaches that in accordance with MPEG2 encoding, for each encoded digital video source, successive contiguous macroblocks are identified over the entire picture area and each macroblock in the picture are is given a unique numerical address corresponding to "first and second macroblock of original content" (Col. 2, lines 34-40). While Hoarty does not specifically reference the term "primary PID to the main content" and a "secondary PID to the substitution content", in an analogous art, Bryant teaches the missing limitation of Hoarty (col. 5 lines 65-67 to col. 6 lines 1-54 & col. 7 lines 19-67 to col. 8 lines 1-59). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify a method for assigning a PID to each data stream by further assigning corresponding macroblocks to the main content and substitution content as taught by Hoarty and by further associating the original, or first and second data stream or program stream, with a first and second PID, respectively, as Bryant in order to accomplish substitution of a macroblocks from different program data streams when receiving multiple program streams with separate packet identifiers.

"means for initiating a private data generator that generates user private data that identifies the main content by the primary PID and substitution content by the secondary PID; means for assembling the private data, the main content mapped to the primary PID and the substitution content mapped to the secondary PID into a data stream" further reads on Bryant (col. 4 lines 10-37—base program content corresponds to primary content and the program fill corresponds to secondary content; col. 5 lines 65-

67 to col. 6 lines 1-54 & col. 7 lines 19-67 to col. 8 lines 1-59—assigning PID to based and fill content).

35. As to Claim 27, Flickinger et al. teaches the content substitution encoder "implemented using a programmed computer" ([0099], Col. 2, line 11-16 -- encoder corresponds to software, hardware, or circuit which encompasses computers or programmed general purpose processors).

36. As to Claim 28, "a decoder" reads on Flickinger (Page 9, Col. 2 -- claim 22 processor configured to decode);

"a receiver receiving data that represents content" reads on Flickinger ([0052], line 1-10; Figure 9, 901 shows MPTS transport stream received with ads and ads metadata),

"the data having a plurality of packet identifiers (PIDs) associated with one or more macroblocks of original content and one or more macroblocks of substitution content" Flickinger teaches ([0052], line 1-10; Figure 9, 901 identifies MPTS transport stream with ads and ads metadata which allows one of ordinary skill in the art to draw an inference that MPTS transport streams transmit data comprising macroblocks). While Flickinger does not specifically reference the phrase "data representing at least one macroblocks of substitution content", Flickinger teaches a separate PID is created for each data stream and for each ad program stream, ([0077] line 3-13). A person skilled in the art would have understood PIDs comprise macroblocks (page 2 "MPEG-2

Transmission"-- PID associated with macroblock of content). In an analogous art, Hoarty teaches "data representing at least one macroblock of substitution content" (Abstract & Col. 2, lines 16-40—teaching MPEG2 signal 1 and MPEG2 signal 2 where source 1 is the first signal (corresponding to "original") and source 2 is the signal to be substituted or overlayed; Col. 2, lines 34-40). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify receiving a plurality of data streams comprising PIDs by receiving data for macroblocks associated with the PIDs as taught by the prior art (MPEG-2 Transmission) and by further receiving a macroblock of the content to be substituted as taught by Hoarty in order to accomplish substitution of a macroblock with a corresponding macroblock when receiving multiple program streams with separate packet identifiers.

"a content decoder configured to play content having the first PID" (Page 9, Col. 2 -- claim 22 set-top processor configured to transmit signals to a television);

"a controller that determines that a substitution criterion has been met to substitute one or more macroblocks of original content" Flickinger discloses this limitation, Flickinger does not specifically reference the phrase "substitute one or more macroblocks of original content" ([0095], line 1-5-- detection module 910 detects the cue tone to indicate an insertion of an ad is to take place). Flickinger implicitly teaches ""substitute one or more macroblocks of original content" where a person skilled in the art would have understood Flickinger's teaching (page 3 [0041]) as inserting ads or substituting only a portion of the PID macroblocks when viewed in light of the prior art of "MPEG-2 Transmission" and Hoarty as discussed above. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to modify receiver comprising a controller for determining when content should be substituted in order to substitute PIDs by incorporating a method of substituting macroblocks associated with PIDs as taught the prior art and Hoarty because the combination of references results in a product that is more desirable and more efficient.

"a PID mapper that maps content having the second PID to the first PID so that the content originally having the second PID is played" Flickinger teaches ([0093], lines 11-15 – an ad insertion module inserts or splices the queued ad according to the cue tone timing and a resulting program stream with the substituted ad is decoded by decoder module and sent to a television or other display device). While Flickinger does not specifically reference the term PID mapper, in an analogous art, Bryant teaches (col. 5 lines 65-67 to col. 6 lines 1-54 & col. 7 lines 19-67 to col. 8 lines 1-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify receiver comprising a module for replacing an original program comprising a first PID to a second program comprising a second PID as taught by Bryant because the combination of references results in a product that is more desirable and more efficient.

37. As to Claim 29, Flickinger et al. teaches "decoder resides in a television Set-top box" (Page 9, Col. 2 -- claim 22 set-top processor configured to decode).

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Florencio et al., US 6,621,866 --disclosing substitution of macroblocks corresponds to claims 1, 15, 26 and 28.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALFONSO CASTRO whose telephone number is (571)270-3950. The examiner can normally be reached on Monday thru Friday (8am to 5pm EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on 571-272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/A. C./
Examiner, Art Unit 2423

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